3. The filament cassette of claim 2, wherein each roller in said pair of rollers is passive and one roller in said pair is a follower roller that is accessible to receive an external drive force.

4. The filament cassette of claim 3, wherein the follower roller has a floating axis of rotation in a direction perpendicular to the filament path, allowing the follower roller to move away from the filament path in the absence of an external applied force, thereby relieving pressure on a filament strand in the filament path.

5. The filament cassette of claim 1, wherein the means for advancing comprises a knurled roller mounted opposite a wall of the filament path so as to grip the filament strand therebetween.

6. The filament cassette of claim 5, wherein the knurled roller is accessible to receive an external drive force.

7. The filament cassette of claim 1, wherein the means for advancing comprises a raised contour in a wall of the filament path over which a strand of filament is positioned, the raised contour being accessible such that an external propulsion force may be applied to the strand of filament.

8. The filament cassette of claim 7, wherein the raised contour is defined by the surface of an idler wheel.

9.(**Amended**) The filament cassette of claim 1, wherein the means for preventing air flow comprises:

a retainer which positions the filament strand in the filament path while blocking air flow along the filament path.

10.(**Amended**) The filament cassette of claim 1, wherein the chamber and the coiled filament are dried to a water content of less than 700 parts per million.

11.(**Amended**) The filament cassette of claim 1, wherein the means for preventing air flow to the chamber additionally prevents air flow to the filament path.

12.(**Amended**) The filament cassette of claim 11, wherein the chamber and the coiled filament are dried to a water content of less than 700 parts per million.

13.(**Amended**) The filament cassette of claim 11, wherein the means for preventing air flow comprises:

a door through which the means for advancing is accessed.

14. The filament cassette of claim 1, wherein the chamber has a window which allows observation of the amount of filament wound on the spool.

15. The filament cassette of claim 1, and further comprising:
a supply of desiccant inside of the chamber.

16. The filament cassette of claim 1 and further comprising:
an electronically readable and writeable data store mounted on the cassette so as to be accessible to an external controller and containing information about the filament.

17. The filament cassette of claim 1, and further comprising:
a registration means for mating with a modeling machine so as to align the exit orifice with a filament conduit of the modeling machine.

18. In a modeling machine that builds three-dimensional objects by depositing flowable modeling material under the control of a controller, wherein the modeling material is provided to the machine in the form of spooled filament and is made flowable when heated in a liquifier carried by the machine, a filament cassette receiving system comprising:

a conduit configured to mate with an exit orifice of a cassette containing spooled filament for receiving a filament strand from an exit orifice of the cassette and guiding the filament strand along a filament path towards the liquifier; and

a drive means responsive to control signals from the controller for advancing the filament strand through the conduit.

19. The cassette receiving system of claim 18, wherein the drive means comprises a roller pair that engages the filament strand in the conduit.

20. The cassette receiving system of claim 18, wherein the drive means comprises a drive wheel which engages a follower wheel on the filament cassette.

21. The cassette receiving system of claim 20, and further comprising:

a registration means for aligning a filament cassette in the loading bay with the conduit and the drive mean.

22. The cassette receiving system of claim 20, and further comprising:

a drive engagement means responsive to control signals for engaging and disengaging the drive means.

23. The cassette receiving system of claim 22, wherein the drive means advances the filament strand to a pair of feed rollers on the modeling machine which then advance the filament strand into the liquifier, and further comprising:

a sensor for detecting presence of the filament strand between the feed rollers and responsively providing a detection indication to the controller;

wherein the drive engagement means disengages the drive means in response to the controller receiving the detection indication.

24. The filament cassette receiving system of claim 18 and further comprising:
a latching means for engaging and disengaging the cassette.

25. The filament cassette receiving system of claim 18 and further comprising:
a means for creating an active moisture barrier along the filament path.

26. The cassette receiving system of claim 18 and further comprising:
an electrical connector electrically coupled to the controller for connecting to an electronically readable and writeable data store of the filament cassette.

27. The cassette receiving system of claim 18 and further comprising:
a loading bay containing the conduit and drive means, into which the filament cassette is removably inserted.

28. The cassette receiving system of claim 27 and further comprising:
a means for ejecting a filament cassette from the loading bay.

29. An extrusion apparatus comprising:
a liquifier which receives modeling material in the form of a filament strand and delivers the material in flowable form for extrusion;
a loading bay for receiving a cassette containing spooled filament;
a conduit for receiving a strand of filament from a cassette inserted in the loading bay and guiding the filament strand along a filament path towards the liquifier; and

a drive means responsive to control signals from the controller for advancing the filament strand through the conduit.

30. The extrusion apparatus of claim 29, and further comprising:
a means for creating an active moisture barrier along the filament path.

31. The extrusion apparatus of claim 30, wherein the conduit makes an airtight seal with the cassette.

32. A method for loading filament into an extrusion apparatus of the type having a liquifier to which a strand of filament is advanced under the control of a controller, the method comprising the steps of:

inserting into a loading bay of the apparatus a cassette containing a coil of filament wound on a spool, the cassette having a filament path terminating in an exit orifice;

engaging a filament strand in the filament path of the cassette; and

advancing the filament strand out of the exit orifice of the cassette and into a conduit of the apparatus which begins a path towards the liquifier.

33. The method of claim 32 and further comprising the step of:
ceasing advancement of the filament strand before it reaches the liquifier in response to the controller receiving an electrical signal indicating that the filament strand is detected at a sensing position.

34. The method of claim 32 and further comprising the step of:
continuing to advance the filament strand through the conduit until it reaches a filament feed drive associated with the liquifier.

35. The method of claim 32 and further comprising the step of:

continuing to advance the filament strand through the conduit and into the liquifier.

36. The method of claim 32 and further comprising the steps of:

identifying that the filament coil remaining in the cassette has reached a predetermined minimum length; and

automatically driving the filament strand back out of the conduit, in response to the minimum length identification, so that the cassette can be removed and replaced.

37.(**Amended**) A method for assembling the filament cassette of claim 10, comprising the steps of:

loading the spool of coiled filament into the chamber;

drying the chamber and the coiled filament to a water content of less than 700 parts per million; and

sealing the chamber.

38. The method of claim 37, wherein the drying step comprises placing a supply of desiccant in the chamber.

39. The method of claim 37, wherein the drying step comprises heating the filament cassette in an oven under vacuum conditions.

40. The method of claim 37, wherein the filament is formed of a high-temperature thermoplastic.

REMARKS

This Preliminary Amendment is submitted for entry in the above-identified application prior to an Examiner undertaking a first Action in connection therewith.